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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,071	01/19/2006	CaoMinh Ta	Q90672	6700

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EXAMINER	
MCCLOUD, RENATA D	

ART UNIT	PAPER NUMBER
2837	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/552,071	TA ET AL.	
	Examiner	Art Unit	
	RENATA MCCLOUD	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,2,6 rejected under 35 U.S.C. 102(e) as being anticipated by Kokami et al (US 6900604.

Claim 1. A motor drive control apparatus comprising a voltage detecting section for detecting phase voltage or line voltage of a brushless DC motor having three or more phases (UVW), a current detecting section (13) for detecting motor current, and a rotor position estimating section for calculating electrical angle of the rotor of the motor, wherein the rotor position estimating section comprising: a back-EMF detecting section (11) for each phase for calculating a back-EMF of each phase of the motor from the phase voltage or line voltage, the motor current, the winding resistance value and winding inductance value, of the motor (col. 4:19-32), an angular speed calculating section (22/32) for calculating angular speed of a rotor of the motor by detecting a maximum value in the bemf of each phase (col. 4:56-67), and an electrical angle calculating section (44) for calculating electrical angle of the rotor from the angular speed (col. 9:63-10:10; 12:5-45).

Claim 2: further comprising a rotor position detecting sensor for detecting electrical angles of the rotor of the motor in a discrete manner, wherein the angle electrical calculating section corrects the calculated electrical angle by the detected electrical angles (col.13:3-10).

Claim 6: a low pass filter (23; col. 6:1-9)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Kokami et al in view of Acarnley (US 6005364)

Claim 3. Kokami et al teach the drive control apparatus according to claim 1 or 2,. Referring to claim 3, they do not teach wherein the rotor position estimating section comprises an error resistance calculating section which calculates a resistance change amount caused by temperature change of the winding resistance based on an error between the calculated electrical angle and the detected electrical angles. Acarnley teaches an error resistance calculating section which calculates a resistance change amount caused by temperature change of the winding resistance based on an error between the calculated electrical angle and the detected electrical angles (col. 9:20-35). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Kokami et al to calculate error as taught by Acarnley in order to accurately determine position.

Claims 4,5 rejected under 35 U.S.C. 103(a) as being unpatentable over Kokami et al in view of Acarnley (US 6005364) as applied to claim 3 and further in view of Koide et al (US 6188196)

Claim 4: Kokami et al and Acarnley teach the limitations of claim 3. Referring to claim 4, they do not teach the rotor position estimating section further comprising a changed temperature calculating section for calculating a temperature change amount of the winding based on the resistance change amount. Koide et al teach calculating a temperature change amount of the winding based on the resistance change amount (col. 21:40-22:30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Kokami et al and Acarnley to calculate temperature as taught by Koide et al in order to accurately determine position.

Claim 5: koide et al teach correcting the angle by a temperature change amount (col 21: 40-22:30).

Claims 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Kokami et al in view of Furukawa (US5767642)

Claims 7: Kokami et al, teach the limitations of claims 1-26. Referring to claims 7 they do not teach a power steering system. Furukawa teaches a power steering system (abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the apparatus taught by Kokami et al in Acarnley (US 6005364) Koide et al (US 6188196) in a power steering apparatus as taught by Furukawa in order to steer a vehicle.

Claims 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Kokami et al in view of Acarnley (US 6005364) further in view of Furukawa (US5767642)

Claim 8: Kokami et al, Acarnley, teach the limitations of claim 3. Referring to claim 8 they do not teach a power steering system. Furukawa teaches a power steering system (abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was

made to use the apparatus taught by Kokami et al in Acarnley (US 6005364) Koide et al (US 6188196) in a power steering apparatus as taught by Furukawa in order to steer a vehicle.

Claims 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Kokami et al in Acarnley (US 6005364) Koide et al (US 6188196) and further in view of Furukawa (US5767642)

Claims 9: Kokami et al, Acarnley, Koide et al teach the limitations of claims 4-6. Referring to claims 9 they do not teach a power steering system. Furukawa teaches a power steering system (abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the apparatus taught by Kokami et al in Acarnley (US 6005364) Koide et al (US 6188196) in a power steering apparatus as taught by Furukawa in order to steer a vehicle.

Response to Arguments

Applicant's arguments filed 7/7/08 have been fully considered but they are not persuasive. In response to applicant's argument that Kokami doe not teach rotor position estimating section (200) for calculating an angle of the rotor, Kokami et al teach determining pole position from the induced voltage (abstract). There is nothing in applicant's claims language that precludes the examiner from reading determining as calculating and thus meeting the claimed limitations.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RENATA MCCLOUD whose telephone number is (571)272-2069. The examiner can normally be reached on Mon.- Fri. from 5:30 am - 2pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on (571) 272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Renata McCloud/
Examiner, Art Unit 2837

/Walter Benson/
Supervisory Patent Examiner, Art Unit 2837